



Policy Brief #2017/04

## Marginal tax rates in the tax-and-transfer system

**The German tax-and-transfer system is often criticized for being hostile to growth and for creating adverse incentives. In this context, the political debate has focused primarily on the so-called middle-class bulge in income-tax rates. When considering the overall system, it can be seen that the debate over the disproportionate tax burden on the middle class diverts attention away from much more significant disincentives in the system as a whole.**

The OECD and the EU Commission regularly criticize the heavy burden that tax and social-security contributions impose on second earners and on small and medium-income households (OECD 2017; European Commission 2016). The relatively high tax wedge is a recurring theme in political debates. For decades, there has been discussion in academic, political and broader societal circles about the need for fundamental reform of the tax system, centered around the key idea of the so-called middle-class bulge (Pestel et al. 2016).

Also central to the ongoing discussion on more “inclusive” growth has been the issue of defining a “fair” tax and social system that can contribute to higher employment rates and therefore to greater economic growth while simultaneously

helping to reduce inequality (BMW 2017). The effective marginal tax rate is the key measure of the incentivizing effect of a tax-and-transfer system. This indicates what proportion of every additionally earned euro has to be deducted – whether in the form of the withdrawal of social welfare benefits, through income tax, or as social security contributions – from the total amount of income directly available to the earner. While it is true that marginal rates of income tax have been lowered and tax allowances have been raised several times since German reunification, the tax-and-transfer system in Germany is still characterized by a comparatively rapidly increasing burden on small and medium-sized incomes as those incomes increase (OECD 2017; Peichl, Pestel and Sieglöckh 2013).

Whereas income taxes are often regarded as being highly progressive, the effective marginal tax rate does not in fact change in step with income, at least beyond the level of a means-tested benefit provision. The picture is similar for second earners. After initially favorable conditions at the level of mini-jobs, rates increase considerably and then fluctuate by fixed amounts, more or less independently of the amount of additional income. Hence, the effective marginal tax rate fluctuates a great deal between 40 percent and 50 percent, and declines steeply when it reaches the assessment ceilings for health and long-term care insurance as well as for unemployment and pension insurance. Indeed, the progressive effect of the income-tax rate is not particularly evident when looking at the effective marginal tax rate.

### **Incentive and tax-rate effects under the status quo**

In order to present the incentive and marginal tax effects under the status quo, we will in the following illustrate the progression of the effective marginal tax rate through (i) the income tax, (ii) social-security contributions, and (iii) transfer withdrawals with reference to the “single-person household” and “single-earner couple with two children” household types. In addition, the financial incentives to work will be measured against the effective marginal tax rate on the annual total gross household income; the effective marginal tax rate indicates what proportion of every additionally earned euro has to be deducted – whether in the form of the withdrawal of social welfare benefits, through income tax, or as social-security contributions – from the total amount of income directly available to the household.

#### **Single-person household**

Diagram 1 shows (in blue) the progression of the effective marginal tax rate for a single-person household in relation to annual gross income. The frequency distribution (right-hand scale) shows that more than 10 percent of single-person households receive no income.

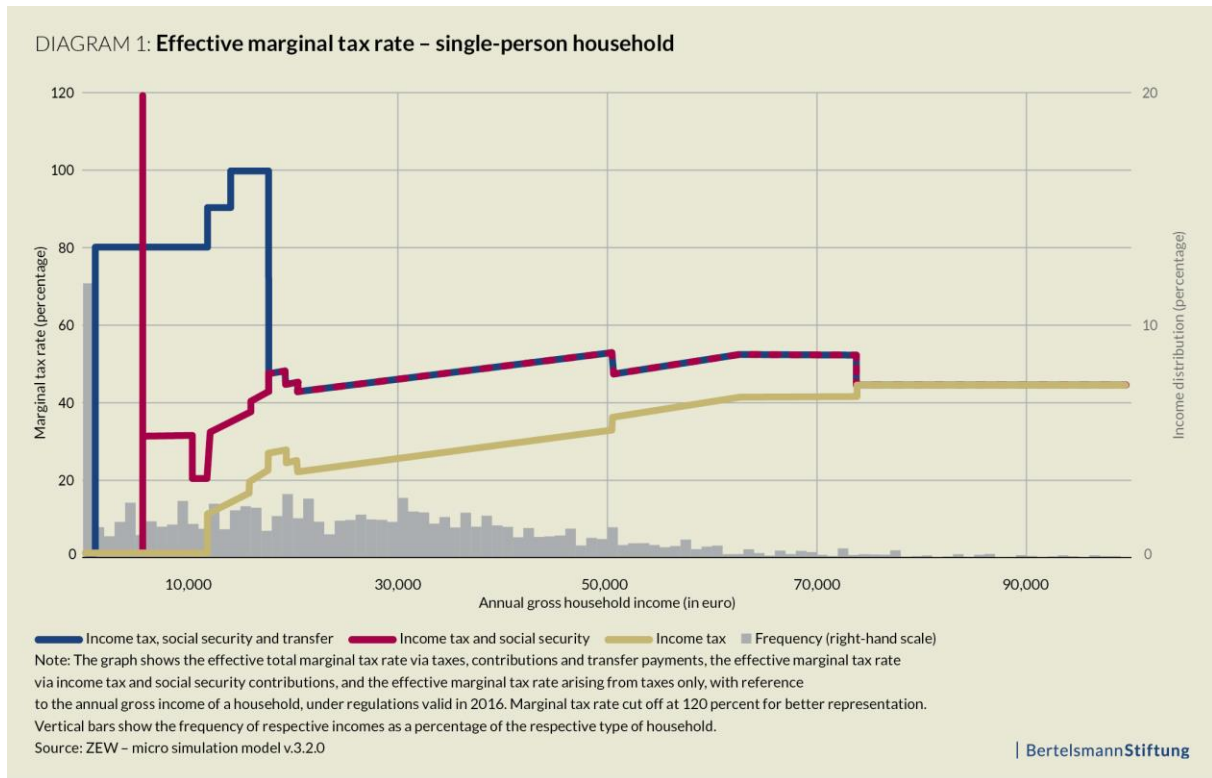
For a single person, a gross annual income of up to €1,200 (€100 per month) is excluded from consideration in Type 2 unemployment-benefit (ALG II) claims. Consequently, the resulting effective marginal tax rate is 0 percent. If annual income exceeds €1,200, ALG II payments for every additional euro of gross income earned by the household will be reduced by 80 cents. The effective marginal tax rate therefore increases dramatically from 0 percent to 80 percent. This remains the case up to an income of €12,000, thus including the zone in which compulsory social-security contributions are introduced for incomes over €450 per month. (This can be clearly seen in Diagram 1 by the dramatic increase in the marginal tax rate via taxes and contributions, shown in red). Given that the employee also has to pay social-security contributions when this threshold is exceeded, a smaller part of the income is subsequently used to calculate the ALG II claim, therefore the effective marginal tax rate remains unchanged.

The same is the case for the point at which an individual becomes liable for tax payments (that is, the yellow-marked marginal tax rates come into effect). In the range from €12,000 to €14,400, the effective marginal tax rate for a single person is 90 percent due to the withdrawal of ALG II payments.

For annual gross incomes of between €14,400 and €17,700, the effective marginal tax rate increases to 100 percent. Although every additional euro earned increases the gross household income, ALG II payments are at the same time reduced by the same amount, meaning that disposable income does not change.

When gross income moves above €17,700, this sample household is no longer eligible for any transfer payments. The subsequent discontinuities are thus caused by the tax system or social-security contributions (red curve).

The discontinuous increase in the marginal tax rate at approximately €17,800 is explained by the phasing-in of the solidarity surcharge. The sharp change at about €19,400 occurs because, after an initial introductory phase with separate rates of increase, the increase in solidarity-tax payments becomes constant for higher income levels. The next somewhat smaller leap at about



€20,400 is the result of regulations for tax deductions for pensions and insurance payments. At a gross annual income of up to just under €20,400, the flat deduction for sundry pensions and insurance, which for a single person is a maximum of €1,900, exceeds the actual costs.

Once this limit is reached, instead of the fixed flat deduction, future deductions reflect only the actual contributions to care and health insurance programs (minus a 4 percent flat rate for sickness benefits). As a result, tax payments for higher incomes increase less rapidly, leading to a sudden drop in the marginal tax rate.

The penultimate discontinuity is caused by reaching the assessment ceiling for statutory health insurance at about €50,900.

The frequency distribution shown in the grey histogram (and on the right axis) makes clear that only a small proportion of single-person households have higher-level incomes. The decline in the marginal tax rate at about €74,400 is caused by reaching the assessment ceiling for pension insurance. From this level of income onward, the marginal tax rate is determined wholly by income-tax rates (yellow curve).

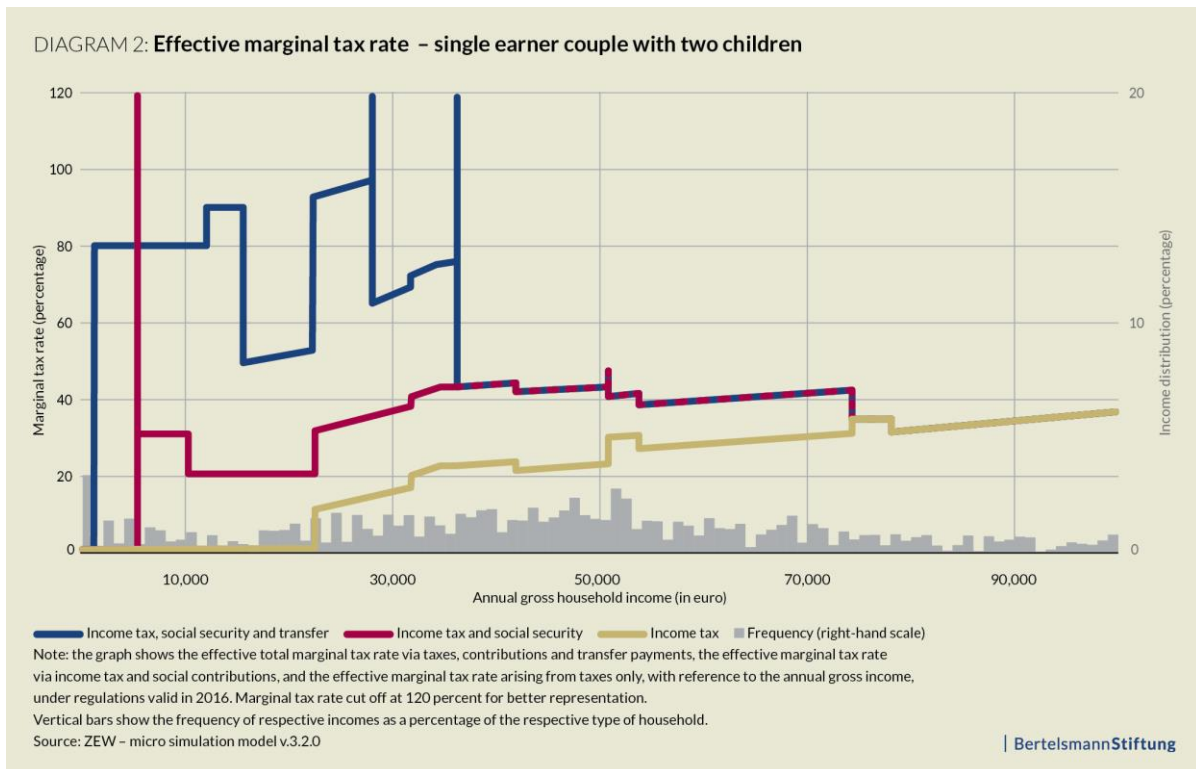
### Single-earner couple with two children

Diagram 2 shows the progression of the effective marginal tax rate for a married single-earner couple with two children. The frequency distribution depicted at the lower edge makes it clear that this type of household spans all income groups.

The first two discontinuities are caused by withdrawal rates for ALG II payments. In contrast to single-person households, the transfer-withdrawal rate associated with ALG II payments never jumps to 100 percent, because a priority check between the basic social-security claim and an alternative claim for supplementary child benefits and housing benefits comes into effect beforehand (from about €15,700). For a household in this range, it is advantageous both from an absolute as well as a marginal-rate point of view to stop claiming ALG II and instead apply for supplementary child benefits and housing benefits.

Here, we can again see that the priority check provided for in social-welfare legislation is not only accompanied by a change in administrative responsibility, but also entails other transfer-withdrawal rates and incentive effects.

For incomes higher than about €15,700, the marginal tax rate then stands at about 50 percent,



because only the housing-related portion of the benefits received is offset by higher incomes and thus gradually withdrawn. However, when the additional transfer withdrawal associated with the supplementary child benefit comes into effect as annual income reaches about €22,400, the marginal tax rate at first increases to 92 percent. At the same time, it is in this range that the obligation to pay income tax sets in.

Not shown in Diagram 2, this initially leads to a sharp increase in housing-benefit claims. As a result, the marginal tax rate is once again negative in the short term. For higher incomes ranging from €22,400 – €28,000 per year, the marginal tax rate then stands at more than 95 percent, because in addition to the withdrawal of housing benefits and supplementary child benefits, income tax also has to be paid. For gross incomes of about €28,100, the upper threshold for supplementary child-benefit eligibility is exceeded, which is why this is suddenly omitted, and the marginal tax rate again clearly exceeds the 100 percent mark. Subsequently the marginal tax rate falls to approximately 60 percent to 70 percent. At around €31,670, the maximum flat-rate deductible amount (€1,900 per person for health-insurance contributions) is reached; at this point, marginal tax rates once again increase slightly.

The next discontinuity is apparent for slightly higher incomes of about €36,300; this is due to housing-benefit eligibility suddenly ending. Actual payments for health insurance exceed the flat rate beginning at incomes of about €42,000, with deductions subsequently reflecting actual payments instead of the flat rate. As a result, the marginal tax rate drops by about two percentage points. The discontinuity at about €50,600 is due to the application of solidarity surcharge payments. The peak that would normally be typical in this case is hardly apparent, because the introduction of this surcharge is to a great extent compensated for by reaching the assessment ceiling (about €50,900) for statutory health insurance.

The phased-in introduction of the solidarity surcharge stops at about €53,900, which explains the leap at that point. The penultimate step is caused by reaching the assessment ceiling for pension insurance (€74,400) – once again the three curves represented in the diagram run together after they have reached this level of income, because the effective marginal tax rate from this point on is determined solely by marginal income-tax payments.

The last step, at €78,000, results from the most favorable tax treatment for child allowances; from

this point on it is worthwhile for the household to apply for the tax-free child allowance.

## Inclusive-growth reform options

The following reform scenarios have been chosen for discussion within the context of high and dramatically increasing marginal tax rates because they would either reduce transfer-withdrawal rates, as in scenarios (1) to (3), or eliminate discontinuities in a targeted way, as in scenarios (4) to (6). Scenario (7) was chosen as it would reduce the marginal income tax rate for a large number of income groups. Scenario (8) would reduce the marginal tax rate for second earners in comparison with the status quo. This is particularly relevant for couples where the first earner has a high income.

### Overview of scenarios

Reform scenarios (1) to (3) each evaluate the integration of the supplementary child benefit, the housing benefit and ALG II payments into a single coordinated transfer payment with a fixed transfer-withdrawal rate that is set for ALG II at 60 percent in the first scenario, 70 percent in the second scenario, and 80 percent in the third scenario; this would replace the income-related regulations currently in force that produce withdrawal rates ranging between 0 percent and 100 percent.

Scenario (4) simulates a housing-benefit reform. Under current legal conditions, housing-benefit claims are rounded up to the nearest euro, and claims of under €10 per month are no longer paid out (§ 19, § 21 WoGG). In the reform scenario, by contrast, housing benefits would no longer be rounded up, and in the future would also be paid out for claims of less than €10 per month.

In scenario (5), the supplementary child benefit, which is currently paid out only after a minimum income limit is reached, and is progressively reduced as the upper income threshold is approached, would be reformed. Currently, once recipients exceed the top income threshold, the supplementary child benefit is no longer paid out (§ 6a BKGG, Federal Child Benefit Law). Under

the reform, the lowest and highest income thresholds for supplementary child-benefit eligibility would be abolished, and instead of the step wise withdrawal there would be a fixed transfer-withdrawal rate of 50 percent.

In reform scenario (6), the solidarity surcharge added to wage and income taxes would be abolished without any replacement.

In reform scenario (7), the middle-class bulge would be flattened by linearizing the tax rate. In the current tariff zones for income-tax rates, the marginal tax rate increases particularly sharply beginning from the basic tax-free amount of €8,652, and then increases much more slowly for incomes up to a taxable income of €53,665. In the reform scenario, there would be instead a zone of linear progressivity between the bottom and the top rates of income, in which the marginal income tax rate would increase steadily.

In reform proposal (8), earned-income splitting for married couples is replaced by so-called real splitting with a maximum transferable amount. In contrast to the current system, married couples would essentially be taxed individually; however, the first earner could transfer up to €13,805 of their taxable income to the second earner. This maximum transferable amount is related to the current maintenance law for spouses who are divorced or living apart (§ 10 paragraph 1 no. 1 EStG, income tax law).

## Macroeconomic effects of the reform scenarios

In order to evaluate the likely effects of these reforms in practice, they will be simulated using a representative population data set and examined with reference to employment, distribution and budgetary effects. Table 1 provides an overview of the most important findings.

### Employment effects

Reform scenarios (1) to (5), which in each case simulate simplifications of the transfer system, would almost without exception increase employment rates and labor-market participation rates. Reform scenarios (1) to (3), under which the

transfer-withdrawal rate for ALG-II-eligible incomes would be a fixed 60 percent, 70 percent or 80 percent, would consistently increase the level of employment.

However, the simulations also show higher transfer-withdrawal rates translate into reduced levels

TABLE 1: Overview of reform effects

Reform scenario	Employment effects	Gini coefficient	Fiscal effects
1 Transfer withdrawal rate 60 percent	137,700	-0.003	-8.35
2 Transfer withdrawal rate 70 percent	66,700	0.000	-0.57
3 Transfer withdrawal rate 80 percent	42,000	0.002	0.96
4 Housing allowance simplification	-300	0.000	-0.06
5 Child supplementary benefit simplification	1,900	0.000	-0.11
6 Abolition of solidarity surcharge	80,800	0.004	-14.08
7 Flattening of middle class bulge	223,300	0.004	-37.28
8 Reform of married couples' earned income splitting	27,300	-0.002	5.59

Note: The table shows the employment effects, the distribution effects and the overall fiscal effect of various reform scenarios after wage and employment adjustments have been made. The column "employment effects" measures the employment effect in relation to the number of people working full time, 40-hour weeks. The column Gini coefficient shows the change in the Gini coefficient. The column fiscal effects shows the overall fiscal costs or benefits in billions of euros. Source: ZEW – micro simulation model v.3.2.0

of additional employment. Therefore, in the scenario with a transfer-withdrawal rate of 80 percent, absolute labor-market participation, measured by the number of people in employment, actually drops by 41,500 people relative to the status quo, even though employment measured in hours would still grow by 42,000 full-time equivalents. This can be interpreted as following: Faced with a reform entailing a transfer-withdrawal rate of 80 percent, some employed people would decide to extend the hours they work, while others would choose to withdraw from the labor market. In particular, for those receiving ALG II payments and who can use small jobs to earn up to €100 per month that is exempt from all tax, contributions and transfer withdrawals, a fixed withdrawal rate of 80 percent would clearly make such jobs

less attractive. Taken as a whole, however, the extension of total working hours would still be the dominant effect.

Whereas the simplification of housing benefits as described in scenario (4) would lead to a small reduction of about 300 full-time equivalents, the simplification of child benefits contained in scenario (5) would have mildly positive effects, with an employment increase of roughly 1,900 full-time equivalents. However, the scenario with the most positive economic effects would be the integration of child benefits, housing benefits and ALG II payments with a fixed transfer-withdrawal rate of 60 percent.

The simulated change in social legislation described in scenario (1) would lead to an employment increase of about 137,700 full-time equivalents. According to the simulation, this would entail about 87,200 additional people in employment. The abolition of the solidarity surcharge in scenario (6) would also have clearly positive effects on employment (about 80,800 additional full-time equivalents) and labor-market participation (about 30,100 additional people in employment). The flattening of the middle-class bulge in scenario (7) has the greatest effects on employment, producing 223,300 additional full-time equivalents, with about 102,600 more people participating in the labor market.

Moving from the current situation of joint taxation to so-called real splitting between two spouses also leads to a noticeable increase in employment, with absolute labor-market participation increasing more strongly (by about 41,400 people) than employment measured in full-time equivalents (an addition of about 27,300).

**Distributional effects**

All eight simulated scenarios have comparatively minor influence on the distributional measures. However, some differences can be identified.

For example, reform scenarios (1), (4), (5) and (8) show a slight tendency to reduce inequality, whereas a small increase in income inequality is evident under reform scenarios (2), (3), (6) and (7). Because the abolition of the solidarity surcharge would mean that those with higher incomes would benefit more than those with lower

incomes, scenario (6) would result in a slight increase in inequality.

With reference to the polarization of income distribution (P90/P10 ratio), the flattening of the middle-class bulge in scenario (7) and the introduction of a fixed transfer-withdrawal rate of 80 percent in scenario (3) would produce the worst results.

For example, the flattening of the middle-class bulge would have virtually no impact on the lowest two deciles of income distribution. The average equivalently weighted positive effect would be about €0 per year for the lowest 10 percent of the income distribution, and about €57 per year for the lowest 20 percent. For two reasons, first because no or only a low amount of taxes are being paid, and second, because low tax payments lead to low transfer payments. The top decile would benefit by around €1,255 on an equivalence-weighted basis. Such undesired distributional effects could for example be counteracted by raising the top rate of tax.

Among the scenarios being considered, the introduction of a fixed transfer-withdrawal rate of 60 percent and the transition of spousal income splitting to real splitting would have the most positive effects on distribution. After adjustments for wages and employment, a transfer withdrawal rate of 60 percent would reduce the poverty rate by 0.6 percentage points, lower the P90/P10 ratio by 0.045 points, and reduce the Gini coefficient by 0.003 points.

### **Fiscal effects**

If the incentive effects and their resulting wage and employment effects over the medium term are taken into account, there will be an additional impact on the national budget.

In such a dynamic analysis, reform scenario (1) would lead to a significant drop of more than €8 billion a year, given the strong labor supply reactions and positive effects on inequality this is a rather low price. The budgetary effects of scenarios (2) and (3) also prove to be more negative once labor demand adjustment effects have been taken into account. On the whole, medium-

term effects on the labor market reduce additional revenues arising from the reform scenarios, and increase additional expenditure.

In light of the considerable fiscal costs for the two tax-relief scenarios (6) and (7) – revenue losses respectively amounting to €14 billion or €38 billion due to abolition of the solidarity surcharge or a flattening of the middle-class bulge – the positive effects on disposable household income and the very positive employment effects have to be put in perspective. Changing married couples' income splitting to a real-splitting model could by contrast generate revenues of €5.59 billion.

## **Summary**

This analysis has shown that the effective marginal tax rate for broad groups of the population diverges considerably from the well-known income tax schedule and is indeed anything but progressive. In general, marginal tax rates in lower income ranges are very high, typically between 80 percent and 100 percent, as a result of transfer withdrawals. In this context, it is crucial to smooth out the overall progression of the marginal tax rate, eliminate discontinuities created by the system, and provide incentives for an increase in gainful employment and wage growth – especially for lower income groups. In this regard, it is worth adjusting the tax, social-contribution and transfer model in such a way that it is always beneficial to be in gainful employment.

With the ultimate aim of strengthening the ability-to-pay principle in the tax-and-transfer system, thereby contributing to inclusive growth, various reform options were outlined that would eliminate the discontinuities within the tax-and-transfer system in a targeted way, while additionally being intended to increase incentives to work. According to simulations, the best ways to achieve the aim of inclusive growth would be by improving the integration of child benefits, housing benefits and ALG II payments, coupled with a fixed transfer-withdrawal rate of 60 percent, or by shifting from earned-income splitting for married couples to so-called real splitting. Both scenarios lead simultaneously to increases in employment and a slight reduction in income inequality. The move to real splitting, which would reduce the

marginal tax rate for second earners – a particularly relevant outcome for women and mothers – would also have a moderately positive effect on tax revenues. The introduction of a fixed transfer-withdrawal rate of 60 percent for social benefits would not only lead to growth in income and employment, particularly in the lower income ranges, but would also result in lower administrative costs due to better integration of the basic social-security, housing and child-benefit systems.

That said, an integrated tax-and-transfer system is hardly a utopia; there are many existing examples in other countries. For example, the social-contribution and income-tax systems are integrated in Denmark; the United Kingdom has had a uniform transfer payment (the universal tax credit) since 2013, and many other countries have partially coordinated systems via “working tax credits” (negative income-tax payments for low earners).

## In-depth study

- Peichl, A., F. Buhlmann and M. Löffler (2017). *Grenzelastungen im Steuer-, Abgaben- und Transfersystem: Fehlanreize, Reformoptionen und ihre Wirkungen auf inklusives Wachstum*. Bertelsmann Stiftung. Gütersloh.

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ISSN: 2191-2459